

AVIATION RULEMAKING ADVISORY COMMITTEE

EXECUTIVE COMMITTEE

RECORD OF MEETING

MEETING DATE: November 7, 2002

MEETING TIME: 10:00 a.m. – 12:00 p.m.

LOCATION: Federal Aviation Administration

800 Independence Ave., SW

McCracken Room

Washington, DC 20591

PUBLIC

ANNOUNCEMENT: The Federal Aviation Administration (FAA) told the public of this Aviation Rulemaking Advisory Committee (ARAC) meeting in a Federal Register notice published October 28, 2003 (67 FR 65828) ([Attachment 1](#)).

ATTENDEES: Executive Committee Members

Sarah MacLeod Aeronautical Repair Stations Association

Air Carrier/General Aviation Maintenance Issues, Assistant Chair

John Swihart Helicopter Association International

Rotorcraft Issuers, Assistant Chair

Bill Edmunds Air Line Pilots Association

Air Carrier Operations Issues, Assistant Chair

Bill Glover Boeing

Occupant Safety Issues, Assistant Chair

Glenn Rizner Helicopter Association International

ARAC Chair

Jim Hurd National Air Disaster Alliance/Foundation

Public Interest Representative

John Rodgers Federal Aviation Administration

Office of Aviation Policy and Plans

Tony Fazio Federal Aviation Administration

ARAC, Executive Director

Ron Priddy National Air Carrier Association

ARAC, Vice Chair

Attendees

Carolina Forrester Federal Aviation Administration, Office of
Rulemaking

Effie Upshaw Federal Aviation Administration, Office of Rulemaking

Gerri Robinson Federal Aviation Administration, Office of Rulemaking

Caren Centorelli Federal Aviation Administration, Office of Rulemaking

John Hickey Federal Aviation Administration, Aircraft Certification Service

Stan Green Interested Public

Robert Swain National Transportation Safety Board

Paul Takemoto Federal Aviation Administration, Office of Public Affairs

Ken Susko Aviation Safety Facilitators Corporation

Lance Nuckolls Aircraft Owners & Pilots Association

Al Prest Air Transport Association of America

Ida Klepper Federal Aviation Administration, Office of Rulemaking

Florence Hamn Federal Aviation Administration, Office of Rulemaking

Thomas Harman "Inside FAA"

Telephone participants

Paul Hudson Public Interest Representative

Norm Joseph Airline Dispatchers Federation

Air Carrier Operations Issues, Alternate Assistant Chair

COMMITTEE ADMINISTRATION

Committee Chair, Glenn Rizner, called the meeting to order at 10:10 a.m., and welcomed everyone to the meeting. He advised the group of the short agenda ([Attachment 2](#)) and the goal of the committee to address each item within the time allotted for the meeting. The Executive Committee members and those attending the meeting introduced themselves. Executive Director, Tony Fazio, read the required Federal Advisory Committee Act (FACA) statement. Mr. Norm Joseph joined the meeting by phone, and later during the meeting Mr. Paul Hudson dialed in.

REVIEW OF MINUTES

Mr. Rizner entertained a motion to accept the minutes of the March 13, 2002, meeting. There was a motion and a second. The committee voted to accept the minutes of the March meeting as written. Mr. Priddy thanked Gerri Robinson for her efforts in transcribing the minutes and relaying them to the committee.

STATUS OF FUEL TANK RECOMMENDATION

Mr. Rizner explained the Fuel Tank Inerting Harmonization Working Group completed their tasking in March 2002, and sent the recommendation to the FAA. ARAC has been asking for an update on the recommendation. Mr. Rizner turned to Tony Fazio, Executive Director, for the update.

Mr. Fazio presented Mr. Rizner a letter written by Nick Sabitini, AVR-1, ([Attachment 3](#)) containing the status of the recommendation. Since receipt of the Fuel Tank Inerting report in March, the FAA has moved forward and made progress in fuel tank inerting. Mr. Fazio then introduced Mr. John Hickey, AIR-1, who proceeded to update the Committee on that progress. Mr. Hickey began his briefing by thanking the committee for the opportunity to address them.

- He explained the agency was disappointed that the projected costs could make an inerting system cost prohibitive. But, Mr. Hickey said the agency is pursuing the issue on the "flammability side of the house."
- Referring to SFAR 88, Mr. Hickey stated the second half of the fuel tank safety issue is ignition sources. But, the agency feels strongly that solving the "flammability side of the house" is fundamentally more profound in safety than ignition sources. Therefore, the FAA is moving towards solving the problems of reducing flammability.
- The FAA has been working toward procuring equipment, designing and producing a system, testing a ¼ scale model for flow of gas, and testing an on-ground, full-scale system on a 747SP. Plus, the agency is working to find an airplane to conduct a full flight test of the system. An earlier test on a 737 airplane showed inert gas could stay in the tank during flight with minimum change to the tanks.

- While the FAA has been moving toward this technology, Mr. Hickey added that Boeing and others have also been looking at inerting. Boeing has sent an application to the FAA to amend the certification of their 737 model and other models that might follow. Boeing is now looking at the possible use of an inerting system as equivalency compliance to SFAR 88.
- As the FAA saw the promise of an inerting system being introduced faster than expected, it adopted a spot amendment several months ago. This amendment did not add further requirements to SFAR 88, but gave the FAA and companies who fall under compliance for SFAR 88 added options by extending the ignition-source deadline for those exploring inerting.

This ended Mr. Hickey's briefing and he answered questions from the committee.

- Some questions were raised about the focus and location of a system. Mr. Hickey stated the minimum solution and focus of an on-board system are the center wing tanks. A statement was made that a major item in any evaluation undertaken, would be the level of safety of a system.
- The question of how long a system could remain inert on the ground was raised. Hickey commented that early data shows on-ground longevity of the system now being explored is 24-48 hours.
- The committee discussed the SFAR 88 time frame requirements and FAA's continued funding for the program. Mr. Priddy asked if the continuing resolution would slow down the program. Mr. Hickey felt it could affect some planned travel to Seattle.

AVR PRIORITY PROCESS

- Tony Fazio updated the committee on current activity within AVR. He pointed out that AVR has 80% of the agency's rulemaking activity. The focus of the management team will be around the growth of regulations, the number of regulations, regulation priority, and direction and focus of regulations.
- The AVR management team is developing an "R" priority list for those rulemakings within the AVR organization; thus, enabling AVR to focus on what needs to be accomplished. This list, AVR believes, will help produce the right regulations from the view of both the FAA and the public. Mr. Fazio alerted the committee that over the course of the next few months they would be hearing more about agency priorities. He stated that right now there is no formal list, but the regulatory agenda is the current standard for what the agency is working on.
 - Sarah McLeod stated that external forces like Congress play an intricate part in setting agency priorities—would there be objective criteria in determining priorities? Mr. Fazio told the committee the agency is studying a software package that would help determine agency priorities. This software applies numerical criteria as a means to determine priorities. He reminded the group of the human element that is present when determining priorities.

- There was a short discussion around the "rulemaking process" and if an "order" about that process was ever completed. Mr. Fazio noted the FAA does have a process and this process is followed closely, but an "order" does not exist. Mr. Swihart asked if rotorcraft rulemaking will be delegated to the Directorate, and said he believes all ARAC packages should be non-controversial. Mr. Fazio replied AVR is exploring all options to develop innovative and/or alternative ways to deal with rulemaking. Another discussion followed about Terms of Reference (TOR's) and the internal Rulemaking Process Record (RPR) process. It was suggested by some that input to the RPR's from outside the FAA should be considered. Everyone agreed that both the FAA and industry have fewer resources to assign to rulemaking. Mr. Fazio pointed out how the FAA has not assigned as many tasks to ARAC recently as they have in the past.
- Reference was made to Harmonization, and the future of the JAA.

DEPARTMENT INTERNET RULEMAKING TRACKING SYSTEM

This was an information item—The Secretary of the Department of Transportation announced the new web site showing the status of Departmental rulemaking. This web site will have all the FAA significant rules (FAA agenda) and provide dates, and document location—FAA, DOT, etc. The data will be revised monthly. To gain access to the site, go to www.dot.gov, click on the hyperlink or //regs.dot.gov. Mr. Fazio asked if you have any problems with the site to please let us know.

GREEN BOOK CHANGES

Carolina Forrester updated the committee on the status of the ARAC Operating Procedures Manual "Green Book." The Office of Rulemaking has now consolidated all the comments. The new manual will be in plain language format. It will clarify the roles and responsibilities of ARAC participants, and be in a new user-friendly format. The FAA expects the manual will be placed on the ARAC web site by the end of the year. Mr. Swihart mentioned he had made previous comments to the green book, and hoped they would be considered as part of the next version cycle. Mr. Fazio assured Mr. Swihart the comments would be reviewed and considered.

PROPOSED EXCOM SCHEDULE FOR 2003

It was noted there were some conflicts to the proposed schedule. A tentative schedule will be E-mailed to the EXCOM members to evaluate and approve. There was a short discussion surrounding the need for EXCOM meetings and meetings should be agenda driven. It was decided that 4 meeting dates would be scheduled. If there were no agenda items, a meeting would be canceled. In the

same respect, if for some reason there was a need for addition meetings, they would be added.

ISSUE AREA STATUS REPORTS FROM ASSISTANT CHAIRS

- **Ron Priddy, Training and Qualifications Issues:** Mr. Priddy reported the issue area has no active tasks.
- **Billy Glover, Occupant Safety Issues:** Mr. Glover reported the issue area met twice this year-- once in June and again in Oct. The final report from the Cabin Safety Harmonization Working Group was submitted to ARAC at the October meeting and should be ready for submission to the FAA by the end of the year.
- **Sarah MacLeod, Air Carrier/General Aviation Maintenance Issues:** The issue area submitted its recommendation on Part 145 - Rating and Qualification Issues to the FAA on 8/13/02. The issue area took on this task without the use of a working group. There are no further active tasks.
- **John Swihart, Rotorcraft Issues:** Mr. Swihart reported there are several active tasks in the issue area.
 - Performance Handling Qualities is in legal review.
 - Composite Structures and Metallic Structures are in preliminary legal and economic review.
 - The Critical Part Working Group told Mr. Swihart their recommendation may be in the form of an AC rather than rulemaking.
 - The next Rotorcraft Issues meeting will be February 10, 2003. Mr. Swihart will work with Carolina Forrester for a waiver to hold the meeting outside Washington, DC.
- **Glenn Rizner, General Aviation Certification and Operations Issues:** Mr. Rizner reported he is awaiting FAA's draft of the 2 new tasks for the issue area.
- **Bill Edmunds, Air Carrier Operations Issues:** Mr. Edmunds reported that the issue area will meet December 16, 2003, to receive the final report of the Extended Range Operations Working Group. The issue area received a draft of the final report to study well before the meeting. The final report, with recommendations, from the issue area should be sent to the FAA prior to the end of the year.

There were no other Assistant Chairs present or on the phone.

REMARKS FROM OTHER EXCOM MEMBERS

- Mr. Hudson suggested the FAA create the following 2 new issue areas and asked for comments by the Executive Committee.
- Sanitation and Health Code Issue Area: This issue area would deal with sanitation and health issues such as bad water, bad air, upgrading of medical kits, etc.
- Regulatory Process and Procedures Issue Area: This issue area would address such items as regulating waivers and exemptions, and the time element for producing regulations.

- Mr. Rizner asked Mr. Fazio for his initial response and a discussion followed. Mr. Fazio reminded everyone that ARAC was set up to provide advice to the FAA Administrator. There would be no need to set up new issue areas if there were no specific tasks. Mr. Fazio felt Mr. Hudson's suggestions sounded like a Petition for Rulemaking and could be handled through a different process. He also suggested the sanitation and health issues could be handled through the Occupant Safety Issue Area.
- Mr. Fazio stated the FAA has statutory authority to grant exemptions and is required to do so.
- Mr. Glover inquired about the process to set up more issue areas. Mr. Fazio said that EXCOM could make a suggestion/recommendation to the FAA and the agency would take it under consideration.
- Mr. Priddy agreed with Mr. Fazio about the sanitation issue and felt the Occupant Safety Issue Area would be the vehicle for Mr. Hudson's concerns. But, he partially agreed with Mr. Hudson on the regulatory process issue and stated that historically, the public has not done a good job commenting on regulations.
- Mr. Hudson stated it has been over 10 years since the first issue areas were set up and there may be a need to expand.
- Mr. Fazio commented most of the work of ARAC is done in the working groups. The working group is where the experts are called on to help. An organization need not be an ARAC member to join a working group.—Mr. Glover agreed.

There were no further comments. Mr. Rizner adjourned the meeting at 11:25 am

Approved by: _____/S/_____

Glenn Rizner, Chair

Date: December 23, 2002

Ratified on: _____



AVIATION RULEMAKING ADVISORY COMMITTEE (ARAC)

FEDERAL AVIATION ADMINISTRATION

McCracken Room

NOVEMBER 7, 2002

EXECUTIVE COMMITTEE MEETING, 10:00 a.m.

- Welcome and Introductions
- Status of Fuel Tank Recommendation
- AVR Priority Process
- Department Internet Rulemaking Tracking System
- Green Book Changes
- Proposed EXCOM schedule for 2003
- Issue Area Status Reports from Assistant Chairs
- Remarks from other EXCOM members



U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

NOV 4 2002

Mr. Glenn Rizner, Chairperson
Aviation Rulemaking Advisory Committee
Helicopter Association International
1632 Prince Street
Alexandria, VA 22314


Dear Mr. Rizner:

Thank you for forwarding the Aviation Rulemaking Advisory Committee's (ARAC) Fuel Tank Inerting recommendation. The Federal Aviation Administration (FAA) appreciates the effort put forth by the Fuel Tank Harmonization Working Group in evaluating inerting options and design concepts, preparing the extensive report, and responding to the questions and comments from the ARAC Executive Committee. The agency accepts the report, but recognizes ARAC did not take a position on the report and some Executive Committee members filed individual views. The FAA posted the report, executive summary, addendum, appendices, and individual views on the ARAC web site (www.faa.gov/avr/arm/arac).

After reviewing the working group's report, the FAA formed a small team to design and build an on-board ground based inerting system that would meet the mission requirements developed by the Fuel Tank Harmonization Working Group. This system has been installed on a 747SP ground-test aircraft at the FAA Technical Center. As that system was being constructed, the FAA continued to evaluate methods that could make an on-board fuel tank inerting system smaller, lighter, and use less aircraft pressurized air (engine bleed air). As a result, the team developed an on-board inerting gas generating system (simplified OBIGGS) that appears to be capable of inerting a fuel tank for the entire flight. We are configuring the 747SP inerting system to simulate the simplified OBIGGS and will perform ground tests to produce system performance data. The agency is working on a plan to conduct a flight test of the simplified system to validate in-flight performance. The enclosed documents provide a diagram of the simplified OBIGGS and show how ARAC's concerns are addressed by the simplified OBIGGS.

The FAA considers this acknowledgment and status report as completion of your task, and therefore, closes the task. I would like to thank the aviation community for its commitment to the ARAC process. Specifically, I would like to thank the members of the Fuel Tank Inerting Harmonization Working Group for the time and resources they devoted to this task.

Sincerely,

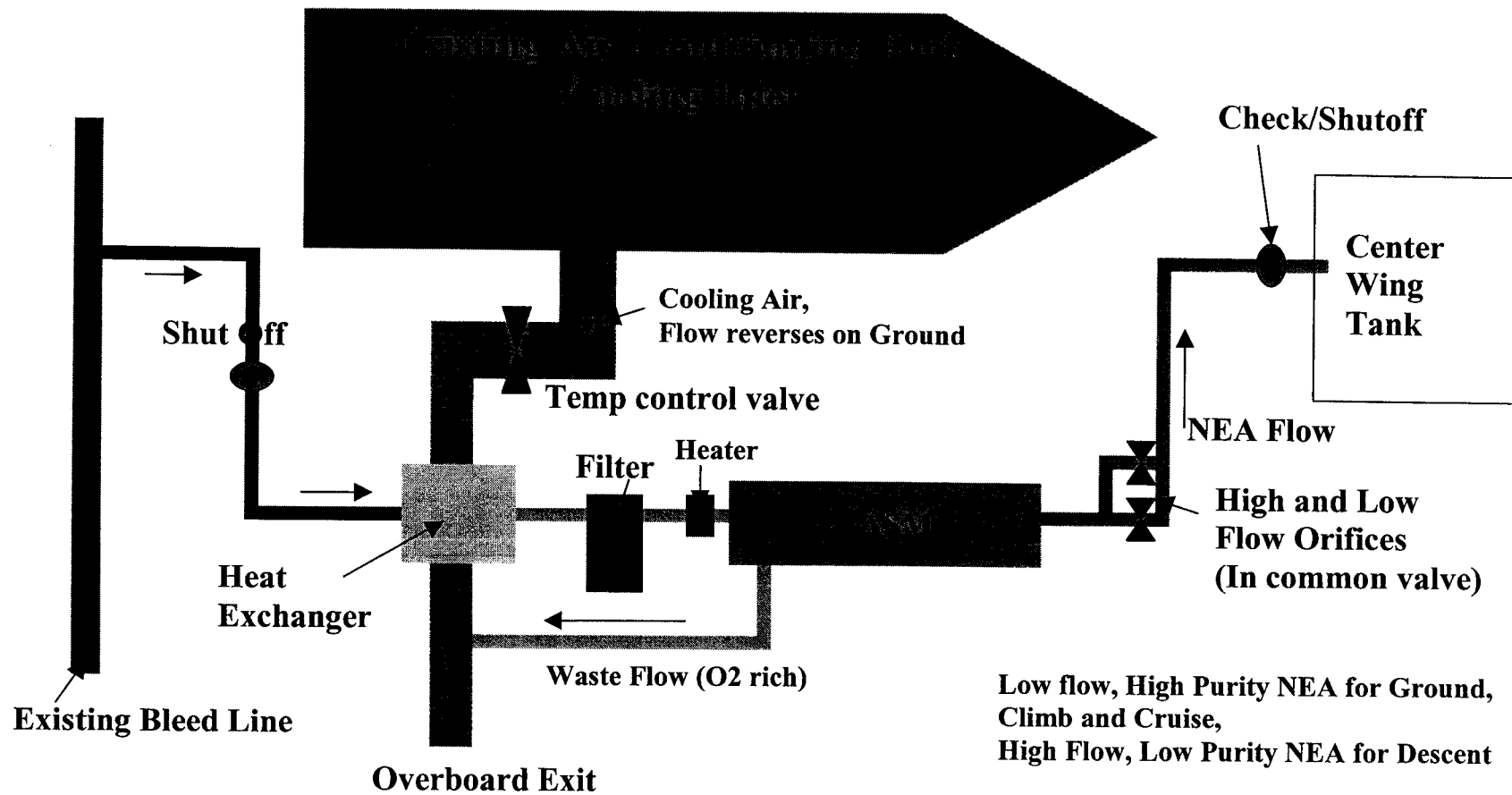


Nicholas A. Sabatini
Associate Administrator
for Regulation and Certification

Enclosure

cc: Mr. Albert Prest

Simplified Onboard Inert Gas Generating System Full Time Fuel Tank Inerting



FAA Action to Address Fuel Tank Inerting Harmonization Working Group Issues with OBIGGS

Fuel Tank Harmonization Working Group Issue	FAA Action to Reduce Cost
No bleed air available to supply nitrogen separator modules, although no data was provided by the working group or in the report. Therefore, working group determined an electric motor driven air compressor was required. (High electrical load, many moving parts therefore high maintenance costs)	Developed simplified OBIGGS and determined nitrogen separation membranes could inert a transport airplane fuel tank with a flow rate that is too low to calculate any affect on bleed air supply.
Complex nitrogen distribution manifold design using computerized fluid dynamics. The manifold would be installed inside fuel tanks that would uniformly inert each tank compartment. Working group estimated it would require 7 - 10 days of dedicated airplane down time to install on inservice airplanes, resulting in high cost to lease airplanes to replace capacity. Testing of prototype during FAA-Boeing ground based inerting flight test program demonstrated it used more nitrogen to inert a tank that did a similar manifold during lab testing at FAA Technical Center.	Constructed a simple plywood model of the 747SP center wing tank. Testing concluded that a single point inerting nozzle (single tank penetration) was more efficient than the complex distribution manifold. Full scale testing of the simplified manifold on the FAA 747SP ground test airplane demonstrated the single point nozzle not only significantly reduces engineering and installation cost, it uses far less nitrogen than the complex distribution manifold design developed used for the working group cost estimates. A fuel tank service company using standard aerospace practices installed the single nozzle in one day.
Complex designs with motor driven compressor have many moving components resulting in low system reliability.	Simplified OBIGGS has very few moving parts - only the variable flow valve and possibly a cooling fan for heat exchanger operation when on the ground.
Hybrid OBIGGS: Approximately 400 lb. for Large Transport Airplane	Simplified OBIGGS: Approximately 100 pounds (or less) for Large Transport Airplane.
Calculated benefit of inerting reduced by using high benefit for ignition prevention under SFAR 88 preventing accidents.	Industry is finding it difficult to obtain the high estimated benefits they predicted they could achieve with ignition prevention under SFAR 88.